

**ALIGNING IP PAYLOADS ON MEMORY BOUNDARIES  
FOR IMPROVED PERFORMANCE AT A SWITCH**

**ABSTRACT OF THE DISCLOSURE**

**[0022]** A network device includes an alignment module to align payloads of received frames on memory boundaries in a buffer memory. The frames may be Ethernet frames which encapsulate IP (Internet Protocol) packets as payloads. The alignment module prefixes dummy bytes to the frame header to shift the IP payload into an aligned position in the memory regions of the memory.